CLAIMS

 (currently amended) A method for improving alignment in a dual damascene process, comprising:

providing an insulating layer;

providing a photoresist over on the insulating layer;

defining and patterning the photoresist, wherein the defined and patterned photoresist includes tops and sidewalls;

depositing a layer of carbon-fluoride material over the tops and sidewalls of the photoresist;

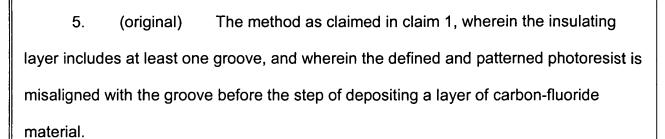
after deposition of the carbon-fluoride material, anisotropically etching the insulating layer to create at least one opening, wherein the tops and sidewalls of the photoresist are covered with the layer of carbon-fluoride material and not etched by the anisotropic etching; and

filling the at least one opening with metal to form at least one via.

- 2. (original) The method as claimed in claim 1, wherein the carbon-fluoride material is deposited at a temperature lower than 100°C.
- 3. (original) The method as claimed in claim 1, wherein the ratio of carbon to fluorine in the carbon-fluoride material is at least 0.25.
- 4. (original) The method as claimed in claim 1, wherein the step of depositing a layer of carbon-fluoride material is a chemical-vapor deposition process.

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6. (original) A semiconductor manufacturing process, comprising:
 providing an insulating material;
 providing a first photoresist over the insulating material;
 defining and patterning the first photoresist;

anisotropically etching the insulating material to form at least one groove in the insulating material;

removing the first photoresist;

providing a second photoresist over the insulating material;

defining and patterning the second photoresist to form a plurality of tops and sidewalls;

depositing a layer of carbon-fluoride material over the tops and sidewalls of the defined and patterned second photoresist; and

anisotropically etching the insulating material to form at least one opening, wherein the at least one opening is aligned with the at least one groove.

- 7. (original) The method as claimed in claim 6, wherein the carbon-fluoride material is deposited at a temperature lower than 100°C.
- 8. (original) The method as claimed in claim 6, wherein the ratio of carbon to fluorine in the carbon-fluoride material is at least 0.25.

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- 9. (original) The method as claimed in claim 6, wherein the step of depositing a layer of carbon-fluoride material is a chemical-vapor deposition process.
- 10. (original) The method as claimed in claim 6, wherein the defined and patterned second photoresist is misaligned with the at least one groove in the insulating layer.
- 11. (original) The method as claimed in claim 6, further comprising a step of filling the at least one opening and the at least one groove with metal.

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